

The proposed experiment will demonstrate the use of the meteorburst radio channel for the precision synchronization of clocks and frequency standards at remote sites. A precise rubidium frequency reference and time reference at a client site will be brought into synchronization with references at a master site via two-way time transfer techniques, such as those employed over leased satellite communications channels. The meteorburst channel is intermittent and sporadic, so opportunities for the transfer of timing information are limited compared to that under existing satellite-based systems.

This project builds on work performed using a link in California under a prior license grant, WK2XJY (file. no. 0015-EX-CN-2022). The signal design and processing techniques will be match those used in the previous work. The transceiver equipment and antenna installations we will use will be relocated from the California sites.

The new work is internally funded by SRI International to build on work previously funded by the Office of Naval Research (Positioning, Navigation, and Timing, Code 31) via contract no. FA2487-18-D-0001, which was overseen by the US Air Force.

The frequency bands we are requesting are as follows:

30.56 – 32.0 MHz

33.0 – 34.0 MHz

35.0 – 36.0 MHz

39.0 – 40.0 MHz

42.0 – 46.6 MHz

47.0 – 49.6 MHz

Our intent in selecting these bands was to avoid requesting the use of spectrum managed by the NTIA because we understand that asking for NTIA bands would complicate the adjudication of our application. We are also avoiding the use of the radio astronomy spectrum from 37.0 to 38.25 MHz.

Our system has flexible tuning and filtering capabilities, and we intend to be sensitive to the presence of other spectrum users. If there are any frequencies of particular concern within our request, we can remove them from the list of frequencies we will use to avoid the potential for interference. We have operated our system at its previous sites under our prior license (WK2XJY) without incident.

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